

# Equation Alignments

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$$\begin{aligned}(a+b)^2 &= (a+b)(a+b) \quad (1) \\ &= a^2 + 2ab + b^2 \quad (2)\end{aligned}$$

$$\begin{aligned}(a+b)^2 &= (a+b)(a+b) \quad (3) \\ &= a^2 + 2ab + b^2\end{aligned}$$

$$\begin{aligned}(a+b)^2 &= (a+b)(a+b) \quad (4) \\ &= a^2 + 2ab + b^2 \quad (5)\end{aligned}$$

$$\begin{aligned}(a+b)^5 &= +a^5 + 5a^4b + 10a^3b^2 \\ &\quad + 10a^2b^3 + 5ab^4 + b^5 \quad (6)\end{aligned}$$

$$\begin{aligned}(a+b)^2 &= (a+b)(a+b) \quad (7) \\ (a+b)(a-b) &= a^2 - b^2 \quad (8)\end{aligned}$$

$$\begin{aligned}\frac{1}{2}\|A\|_F &\leq \|A\|_2 \leq \|A\|_F \quad (9) \\ \frac{1}{\sqrt{m}}\|A\|_1 &\leq \|A\|_2 \leq \sqrt{n}\|A\|_1 \quad (10)\end{aligned}$$

```
% LaTeX2e
\begin{eqnarray}
(a+b)^2 &=& (a+b)(a+b) \\
&& a^2+2ab+b^2
\end{eqnarray}
```

```
% AMS
\begin{equation}
\begin{split}
(a+b)^2 &= (a+b)(a+b) \\
&= a^2+2ab+b^2
\end{split}
\end{equation}
```

```
% AMS
\begin{align}
(a+b)^2 &= (a+b)(a+b) \\
&= a^2+2ab+b^2
\end{align}
```

```
% AMS
\begin{equation}
\begin{split}
(a+b)^5 &= +a^5 + 5a^4b + 10a^3b^2 \\
&\quad + 10a^2b^3 + 5ab^4 + b^5
\end{split}
\end{equation}
```

```
% AMS
\begin{gather}
(a+b)^2=(a+b)(a+b) \\
(a+b)(a-b)=a^2-b^2
\end{gather}
```

```
% require eqnarray.sty
\bgroup
\setlength{\arraycolsep}{2bp}
\begin{equationarray}{rcccl}
\frac{1}{2}\|A\|_F &\leq& \|A\|_2 &\leq& \|A\|_F \\
\frac{1}{\sqrt{m}}\|A\|_1 &\leq& \|A\|_2 &\leq& \sqrt{n}\|A\|_1
\end{equationarray}
\egroup
```